

## 2002 Paper 3 Question 1

### Compiler Construction

- (a) Give a diagram showing the phases of a typical compilation system for a language like C which produces a directly executable fully-linked binary file as output. For each phase, describe in a paragraph what it does (mentioning possible implementation techniques) and give a brief overview of the data-structures used for its input and output indicating whether they would normally reside in a file or in memory. (Do not specify details of any files used to automate the writing of any of the above phases.) [16 marks]
- (b) Indicate how a typical Java implementation might differ and explain what is meant by *just-in-time compilation*. [4 marks]